CROSS CONNECTION / BACKFLOW PREVENTION PROGRAM

OREGON ADMINISTRATIVE RULES PERMANENTLY ADOPTED JANUARY 31, 2006*

Relating to

Cross Connection Control

OAR 333-061-0020, 0025, 0030, 0045, 0061, 0065, 0070, 0071, 0072, 0073, 0074, 0090, and OAR 166-200-0110

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TABLE OF CONTENTS

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OREGON ADMINISTRATIVE RULES
CHAPTER 333 DIVISION 061

333-061-0020 Definitions

As used in these rules, unless the context indicates otherwise:

(1) "Act" means the Oregon Drinking Water Quality Act of 1981 (ORS 448.115-448.990 as amended).

(2) "Action Level" means the concentration of lead or copper in water which determines, in some cases, the treatment requirements that a water system is required to complete.

(3) "Administrator" means the Director of the Department of Human Services or his/her designee.

(4) "Approval" or "Approved" means approved in writing.

(5) "Approved Air Gap (AG)" means a physical separation between the free-flowing discharge end of a potable water supply pipeline and an open or non-pressurized receiving vessel. An "Approved Air Gap" shall be at least twice the diameter of the supply pipe measured vertically above the overflow rim of the vessel and in no case less than 1 inch (2.54 cm), and in accord with Oregon Plumbing Specialty Code.

(6) "Approved Backflow Prevention Assembly" means a Reduced Pressure Principle Backflow Prevention Assembly, Reduced Pressure Principle-Detector Backflow Prevention Assembly, Double Check Valve Backflow Prevention Assembly, Double Check-Detector Backflow Prevention Assembly, Pressure Vacuum Breaker Backsiphonage Prevention Assembly, or Spill-Resistant Pressure Vacuum Breaker Backsiphonage Prevention Assembly, of a make, model, orientation, and size approved by the Department. Assemblies listed in the currently approved backflow prevention assemblies list developed by the University of Southern California, Foundation for Cross-Connection Control and Hydraulic Research, or other testing laboratories using equivalent testing methods, are considered approved by the Department.

(7) "Aquifer" means a water saturated and permeable geological formation, group of formations, or part of a formation that is capable of transmitting water in sufficient quantity to supply wells or springs.

(8) "Aquifer Parameter" means a characteristic of an aquifer, such as thickness, porosity or hydraulic conductivity.

(9) "Aquifer Test" means pumping a well in a manner that will provide information regarding the hydraulic characteristics of the aquifer.

(10) "Atmospheric Vacuum Breaker (AVB)" means a non-testable device consisting of an air inlet valve or float check, a check seat and an air inlet port(s). This device is designed to protect against a non-health hazard or a

health hazard under a backsiphonage condition only. Product and material approval is under the Oregon Plumbing Specialty Code.

(11) "Auxiliary Water Supply" means any supply of water used to augment the supply obtained from the public water system, which serves the premise in question.

(12) "Average Groundwater Velocity" means the average velocity at which groundwater moves through the aquifer as a function of hydraulic gradient, hydraulic conductivity and porosity.

(13) "AWWA" means the American Water Works Association.

(14) "Backflow" means the flow of water or other liquids, mixtures, or substances into the distributing pipes of a potable supply of water from any sources other than its intended source, and is caused by backsiphonage or backpressure.

(15) "Backflow Preventer" means a device, assembly or method to prevent backflow into the potable water system.

(16) "Backflow Prevention Assembly" means a backflow prevention assembly such as a Pressure Vacuum Breaker Backsiphonage Prevention Assembly, Spill-Resistant Pressure Vacuum Breaker Backsiphonage Prevention Assembly, Double Check Valve Backflow Prevention Assembly, Double Check-Detector Backflow Prevention Assembly, Reduced Pressure Principle Backflow Prevention Assembly, or Reduced Pressure Principle-Detector Backflow Prevention Assembly and the attached shutoff valves on the inlet and outlet ends of the assembly, assembled as a complete unit.

(17) "Backpressure" means an elevation of pressure downstream of the distribution system that would cause, or tend to cause, water to flow opposite of its intended direction.

(18) "Backsiphonage" means a drop in distribution system pressure below atmospheric pressure (partial vacuum), that would cause, or tend to cause, water to flow opposite of its intended direction.

(19) "Best Available Technology" or "BAT" means the best technology, treatment techniques, or other means which the EPA finds, after examination for efficacy under field conditions and not solely under laboratory conditions, are available (taking cost into consideration).

(20) "Bore-Sighted Drain to Daylight" means an unrestricted straight-line opening in an enclosure that vents to grade, and is sized and constructed to adequately drain the full flow discharge from a reduced pressure principle backflow prevention assembly thus preventing any potential for submersion of the assembly.

(21) "Bottled Water" means potable water from a source approved by the Department for domestic use which is placed in small, easily transportable containers.

(22) “Calculated Fixed Radius” means a technique to delineate a wellhead protection area, based on the determination of the volume of the aquifer needed to supply groundwater to a well over a given length of time.
(23) “CFR” means the Code of Federal Regulations. Specifically, it refers to those sections of the code which deal with the National Primary and Secondary Drinking Water Regulations.
(24) “Check Valve” means a valve, which allows flow in only one direction.
(25) “Coagulation” means a process using coagulant chemicals and mixing by which colloidal and suspended materials are destabilized and agglomerated into floc.
(26) “Coliform-Positive” means the presence of coliform bacteria in a water sample.
(27) “Community Water System” means a public water system that has 15 or more service connections used by year-round residents, or that regularly serves 25 or more year-round residents.
(28) “Compliance Cycle” means the nine-year calendar year cycle during which public water systems must monitor. Each compliance cycle consists of three three-year compliance periods. The first calendar year cycle begins January 1, 1993 and ends December 31, 2001.
(29) “Compliance Period” means a three-year calendar year period within a compliance cycle. Each compliance cycle has three three-year compliance periods. Within the first compliance cycle, the first compliance period runs from January 1, 1993 to December 31, 1995; the second from January 1, 1996 to December 31, 1998; and the third from January 1, 1999 to December 31, 2001.
(30) “Comprehensive performance evaluation (CPE)” means a thorough review and analysis of a treatment plant's performance-based capabilities and associated administrative, operation and maintenance practices. It is conducted to identify factors that may be adversely impacting a plant's capability to achieve compliance and emphasizes approaches that can be implemented without significant capital improvements. The CPE must consist of at least the following components: Assessment of plant performance; evaluations of major unit processes; identification and prioritization of performance limiting factors; assessment of the applicability of comprehensive technical assistance; and preparation of a CPE report.
(31) “Conceptual Model” means a three-dimensional representation of the groundwater system, including the location and extent of the hydrogeologic units, areas of recharge and discharge, hydrogeologic boundaries and hydraulic gradient.
(32) “Confined Well” means a well completed in a confined aquifer. More specifically, it is a well which produces water from a formation that is overlain by an impermeable material of extensive area. This well shall be constructed

according to OAR Chapter 690, Division 200 “Well Construction and Maintenance” standards.

(33) “Confluent Growth” means a continuous bacterial growth covering the entire filtration area of a membrane filter, or a portion thereof, in which bacterial colonies are not discrete.

(34) “Constructed Conveyance” means any human-made conduit such as ditches, culverts, waterways, flumes, mine drains, canals or any human-altered natural water bodies or waterways as determined by the Department.

(35) “Contaminant” means any physical, chemical, biological, or radiological substance or matter in water that creates a health hazard.

(36) “Contingency Plan” means a document setting out an organized, planned and coordinated course of action to be followed in the event of a loss of capacity to supply water to the distribution system or in case of a fire, explosion or release of hazardous waste which could threaten human health or the environment.

(37) “Corrosion Inhibitor” means a substance capable of reducing the corrosivity of water toward metal plumbing materials, especially lead and copper, by forming a protective film on the interior surface of those materials.

(38) “Cross Connection” means any actual or potential unprotected connection or structural arrangement between the public or user’s potable water system and any other source or system through which it is possible to introduce into any part of the potable system any used water, industrial fluid, gas, or substances other than the intended potable water with which the system is supplied. Bypass arrangements, jumper connections, removable sections, swivel, or change-over devices, and other temporary or permanent devices through which, or because of which, backflow can occur are considered to be cross connections.

(39) “CT” means the product of the residual disinfectant concentration "C" (measured in mg/l) and disinfectant contact time(s), "T" (measured in minutes).

(40) “Degree of Hazard” means either pollution (non-health hazard) or contamination (health hazard) and is determined by an evaluation of hazardous conditions within a system.

(41) “Delineation” means the determination of the extent, orientation and boundaries of a wellhead protection area using factors such as geology, aquifer characteristics, well pumping rates and time of travel.

(42) “Demonstration Study” means a series of tests performed to prove an overall effective removal and/or inactivation rate of a pathogenic organism through a treatment or disinfection process.

(43) “Department” means the Oregon Department of Human Services (DHS).

(44) “Discharge” means the volume rate of loss of groundwater from the aquifer through wells, springs or to surface water.

(45) “Disinfectant Contact Time” means the time in minutes that it takes for water to move from the point of disinfectant application or the previous point of disinfection residual measurement to a point before or at the point where residual disinfectant concentration is measured.

(46) “Disinfection” means a process which inactivates pathogenic organisms in water by chemical oxidants or equivalent agents.

(47) “Disinfection profile” means a summary of *Giardia lamblia* inactivation through the treatment plant.

(48) “Distribution System” means the network of pipes and other facilities, which are used to distribute water from the source, treatment, transmission, or storage facilities to the water user.

(49) “Domestic or other non-distribution system plumbing problem” means a coliform contamination problem in a public water system with more than one service connection that is limited to the specific service connection from which the coliform-positive sample was taken.

(50) “Dose Equivalent” means the product of the absorbed dose from ionizing radiation and such factors as account for differences in biological effectiveness due to the type of radiation and its distribution in the body as specified by the International Commission on Radiological Units and Measurements (ICRU).

(51) “Double Check-Detector Backflow Prevention Assembly (DCDA)” means a specially designed assembly composed of a line size approved double check valve assembly assembled with a bypass containing a specific water meter and an approved double check valve assembly. The meter shall register accurately for only very low rates of flow up to three gallons per minute and shall show a registration for all rates of flow. This assembly is designed to protect against a non-health hazard.

(52) “Double Check Valve Backflow Prevention Assembly (DC)” means an assembly of two independently acting approved check valves, including tightly closing resilient seated shutoff valves attached at each end of the assembly and fitted with properly located resilient seated test cocks. This assembly is designed to protect against a non-health hazard.

(53) “Drawdown” means the difference, measured vertically, between the static water level in the well and the water level during pumping.

(54) “Drinking Water Protection” means implementing strategies within a drinking water protection area to minimize the potential impact of contaminant sources on the quality of water being used as a drinking water source by a Public Water System.

(55) “Drinking Water Protection Area (DWPA)” means the source area supplying drinking water to a Public Water System. For a surface water-supplied drinking water source the DWPA is all or a specifically determined part of a lake's, reservoir's or stream's watershed that has been certified by the Department of

Environmental Quality. For a groundwater-supplied drinking water source the DWPA is the area on the surface that directly overlies that part of the aquifer that supplies groundwater to a well, well field or spring that has been certified by the Department.

(56) "Drinking Water Protection Plan" means a plan, certified by the Department of Environmental Quality according to OAR 340-040-0160 to 340-040-0180, which identifies the actions to be taken at the local level to protect a specifically defined and certified drinking water protection area. The plan is developed by the local Responsible Management Authority and/or team and includes a written description of each element, public participation efforts, and an implementation schedule.

(57) "Effective Corrosion Inhibitor Residual" means a concentration sufficient to form a passivating film on the interior walls of a pipe.

(58) "Effective Porosity" means the ratio of the volume of interconnected voids (openings) in a geological formation to the overall volume of the material.

(59) "Element" means one of seven objectives considered by the U.S. EPA as the minimum required components in any state wellhead protection program: specification of duties, delineation of the wellhead protection area, inventory of potential contaminant sources, specification of management approaches, development of contingency plans, addressing new (future) wells, and ensuring public participation.

(60) "Emergency" means a condition resulting from an unusual calamity such as a flood, storm, earthquake, drought, civil disorder, volcanic eruption, an accidental spill of hazardous material, or other occurrence which disrupts water service at a public water system or endangers the quality of water produced by a public water system.

(61) "Emergency Response Plan" means a written document establishing contacts, operating procedures, and actions taken for a public water system to minimize the impact or potential impact of a natural disaster, accident, or intentional act which disrupts or damages, or potentially disrupts or potentially damages the public water system or drinking water supply, and returns the public water system to normal operating condition.

(62) "Enhanced coagulation" means the addition of sufficient coagulant for improved removal of disinfection byproduct precursors by conventional filtration treatment.

(63) "Enhanced softening" means the improved removal of disinfection byproduct precursors by precipitative softening.

(64) "EPA" means the United States Environmental Protection Agency.

(65) "Filter profile" means a graphical representation of individual filter performance, based on continuous turbidity measurements or total particle counts versus time for an entire filter run, from start-up to backwash

inclusively, that includes an assessment of filter performance while another filter is being backwashed.

(66) "Filtration" means a process for removing particulate matter from water through porous media.

(a) "Conventional Filtration Treatment" means a series of processes including coagulation (requiring the use of a primary coagulant and rapid mix), flocculation, sedimentation, and filtration resulting in substantial particulate removal.

(b) "Direct Filtration Treatment" means a series of processes including coagulation (requiring the use of a primary coagulant and rapid mix) and filtration but excluding sedimentation resulting in substantial particulate removal.

(c) "Slow Sand Filtration" means a treatment process involving passage of raw water through a bed of sand at low velocity (generally less than 235 gallons per square foot per day) resulting in substantial particulate removal by physical and biological mechanisms.

(d) "Diatomaceous Earth Filtration" means a process resulting in substantial particulate removal in which:

(A) A precoat cake of diatomaceous earth filter media is deposited on a support membrane (septum); and

(B) While the water is filtered by passing through the cake on the septum, additional filter media, known as body feed, is continuously added to the feed water, in order to maintain the permeability of the filter cake.

(67) "First Customer" means the initial service connection or tap on a public water supply after any treatment processes.

(68) "First Draw Sample" means a one-liter sample of tap water that has been standing in plumbing pipes at least 6 hours and is collected without flushing the tap.

(69) "Flocculation" means a process to enhance agglomeration or collection of smaller floc particles into larger, more easily settleable particles through gentle stirring by hydraulic or mechanical means.

(70) "Future Groundwater Sources" means wells and/or springs that may be required by the public water system in the future to meet the needs of the system.

(71) "GAC 10" means granular activated carbon filter beds with an empty-bed contact time of 10 minutes based on average daily flow and a carbon reactivation frequency of every 180 days.

(72) "Gross Alpha Particle Activity" means the total radioactivity due to alpha particle emission as inferred from measurements on a dry sample.

(73) “Gross Beta Particle Activity” means the total radioactivity due to beta particle emission as inferred from measurements on a dry sample.

(74) “Groundwater under the direct influence of surface water (GWUDI)” means any water beneath the surface of the ground with significant occurrence of insects or other macro-organisms, algae or large-diameter pathogens such as *Giardia lamblia* or *Cryptosporidium*, or significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity, or pH which closely correlate to climatological or surface water conditions.

(75) “Haloacetic acids (five) (HAA5)” mean the sum of the concentrations in milligrams per liter of the haloacetic acid compounds (monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid and dibromoacetic acid), rounded to two significant figures after addition.

(76) “Hauled Water” means water for human consumption transported from a Public Water System in a manner approved by the Department.

(77) “Health Hazard (Contamination)” means an impairment of the quality of the water that could create an actual hazard to the public health through poisoning or through the spread of disease by sewage, industrial fluids, waste, or other substances.

(78) “Human Consumption” means water used for drinking, personal hygiene bathing, showering, cooking, dishwashing and maintaining oral hygiene.

(79) “Hydraulic Conductivity” means the capacity of the medium, e.g., soil, aquifer, or any hydrogeological unit of interest, to transmit water.

(80) “Hydraulic Connection” refers to a well, spring or other groundwater collection system in which it has been determined that part of the water supplied by the collection system is derived, either naturally or induced, from a surface water source.

(81) “Hydraulic Gradient” means the slope of the water table or potentiometric surface, calculated by dividing the change in hydraulic head between two points by the horizontal distance between the points in the direction of groundwater flow.

(82) “Hydraulic Head” means the energy possessed by the water mass at a given point, related to the height above the datum plane that water resides in a well drilled to that point. In a groundwater system, the hydraulic head is composed of elevation head and pressure head.

(83) “Hydrogeologic Boundary” means physical features that bound and control direction of groundwater flow in a groundwater system. Boundaries may be in the form of a constant head, e.g. streams, or represent barriers to flow, e.g. groundwater divides and impermeable geologic barriers.

(84) “Hydrogeologic Mapping” means characterizing hydrogeologic features (e.g. hydrogeologic units, hydrogeologic boundaries, etc.) within an area and determining their location, areal extent and relationship to one another.

(85) “Hydrogeologic Unit” means a geologic formation, group of formations, or part of a formation that has consistent and definable hydraulic properties.
(86) “Impermeable Material” means a material that limits the passage of water.
(87) “Impounding Reservoir” means an uncovered body of water formed behind a dam across a river or stream, and in which water is stored.
(88) “Infiltration Gallery” means a system of perforated pipes laid along the banks or under the bed of a stream or lake installed for the purpose of collecting water from the formation beneath the stream or lake.
(89) “Initial Compliance Period” means the 1993-95 three-year compliance period for systems with 150 or more service connections and the 1996-98 three-year compliance period for systems having fewer than 150 service connections for the contaminants prescribed in OAR 333-061-0036(2)(a)(A)(v), 333-061-0036(3)(a)(J) and (3)(c)(N).
(90) “Interfering Wells” means wells that, because of their proximity and pumping characteristics, and as a result of the aquifer's hydraulic properties, produce drawdown cones that overlap during simultaneous pumping. The result is a lowering of the pumping level in each well below what it would be if that well were pumping by itself.
(91) “Inventory of Potential Contaminant Sources” means the reconnaissance level location of land use activities within the Drinking Water Protection Area that as a category have been associated with groundwater or surface water contamination in Oregon and elsewhere in the United States.
(92) “Lead Free” when used with respect to solders and flux shall mean solders and flux containing not more than 0.2 percent lead, and when used with respect to pipes and fittings shall mean pipes and fittings containing not more than 8.0 percent lead. When used with respect to plumbing fittings and fixtures intended for dispensing water for human consumption shall mean in compliance with standards established in accordance with 42 U.S.C. 300g-6(e) and ANSI/NSF standard 61, section 9.
(93) “Lead Service Line” means a service line made of lead, which connects the water main to the building inlet and any pigtail, gooseneck or other fitting, which is connected to such lead line.
(94) “Legionella” means a genus of bacteria, some species of which have caused a type of pneumonia called Legionnaires Disease.
(95) “Local Administrative Authority” means the individual official, board, department or agency established and authorized by a state, county or city to administer and enforce the provisions of the Oregon State Plumbing Specialty Code adopted under OAR 918-750-0110.
(96) “Major Additions or Modifications” means changes of considerable extent or complexity including, but not limited to, projects involving water sources, treatment facilities, facilities for continuous disinfection, finished water

storage, pumping facilities, transmission mains, and distribution mains, except main replacements of the same length and diameter.

(97) "Man-made Beta Particle and Photon Emitters" means all radionuclides emitting beta particles and/or photons listed in **Maximum Permissible Body Burdens and Maximum Permissible Concentration of Radionuclides in Air or Water for Occupational Exposure, NBS Handbook 69**, except the daughter products of Thorium-232, Uranium-235 and Uranium-238.

(98) "Master Plan" means an overall plan, which shows the projected development of a distribution system and alternatives for source development.

(99) "Maximum Contaminant Level (MCL)" means the maximum allowable level of a contaminant in water delivered to the user's of a public water system, except in the case of turbidity where the maximum allowable level is measured at the point of entry to the distribution system.

(100) "Maximum Residual Disinfectant Level (MRDL)" means a level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap without an unacceptable possibility of adverse health effects.

(101) "Multi-purpose Piping System" means a piping system within residential dwellings intended to serve both domestic and fire protection needs. This type of system is considered part of a potable water system.

(102) "New Groundwater Sources" means additional or modified wells and/or springs owned by the Public Water System.

(103) "Non-Health Hazard (Pollution)" means an impairment of the quality of the water to a degree that does not create a hazard to the public health, but does adversely affect the aesthetic qualities of such water for potable use.

(104) "Non-Transient Non-Community Water System (NTNC)" means a public water system that is not a Community Water System and that regularly serves at least 25 of the same persons over 6 months per year.

(105) "Open Interval" means in a cased well, the sum of the length(s) of the screened or perforated zone(s) and in an uncased (open-hole) well, the sum of the thickness(es) of the water-bearing zones or, if undeterminable, 10 percent of the length of the open hole.

(106) "Optimal Corrosion Control Treatment" means the corrosion control treatment that minimizes the lead and copper concentrations at users' taps while insuring that the treatment does not cause the water system to violate any national primary drinking water regulations.

(107) "Pathogenic" means a specific agent (bacterium, virus or parasite) causing or capable of causing disease.

(108) "Peak Daily Demand" means the maximum rate of water use, expressed in gallons per day, over the 24-hour period of heaviest consumption.

(109) "Permit" means official permission granted by the Department for a public water system which exceeds maximum contaminant levels to delay, because of

economic or other compelling factors, the installation of water treatment facilities which are necessary to produce water which does not exceed maximum contaminant levels.

(110) "Person" means any individual, corporation, association, firm, partnership, municipal, state or federal agency, or joint stock company and includes any receiver, special master, trustee, assignee, or other similar representative thereof.

(111) "Picocurie (pCi)" means that quantity of radioactive material producing 2.22 nuclear transformations per minute.

(112) "Pilot Study" means the construction and operation of a scaled down treatment system during a given period of time to determine the feasibility a full-scale treatment facility.

(113) "Plug Flow" means movement of water in a pipe such that particles pass through the pipe and are discharged in the same sequence in which they entered.

(114) "Point of Delivery (POD)" means the point of connection between a public water system and the user's water system. Beyond the point of delivery, the Oregon Plumbing Specialty Code applies. See "Service Connection".

(115) "Point of Disinfectant Application" is the point where the disinfectant is applied and water downstream of that point is not subject to recontamination by surface water runoff.

(116) "Point-of-Entry Treatment Device" is a treatment device applied to the drinking water entering a house or building for the purpose of reducing contaminants in the drinking water distributed throughout the house or building.

(117) "Point-of-Use Treatment Device" is a treatment device applied to a single tap used for the purpose of reducing contaminants in drinking water at that one tap.

(118) "Pollutant" means a substance that creates an impairment of the quality of the water to a degree which does not create a hazard to the public health, but which does adversely affect the aesthetic qualities of the water.

(119) "Porous Media Assumption" means the assumption that groundwater moves in the aquifer as if the aquifer were granular in character, i.e. moves directly down-gradient, and the velocity of the groundwater can be described by Darcy's Law.

(120) "Potable Water". See Safe Drinking Water.

(121) "Potential Contaminant Source Inventory" means the determination of the location within the wellhead protection area of activities known to use or produce materials that can contaminate groundwater.

(122) "Potential Cross Connection" means a cross connection that would most likely occur, but may not be taking place at the time of an inspection.

(123) “Potentiometric Surface” means a surface that denotes the variation of hydraulic head in the given aquifer across an area.
(124) “Premise” means real estate and the structures on it.
(125) “Premise Isolation” means the practice of protecting the public water supply from contamination or pollution by installing backflow prevention assemblies at, or near, the point of delivery where the water supply enters the premise. Premise isolation does not guarantee protection to persons on the premise.
(126) “Pressure Vacuum Breaker Backsiphonage Prevention Assembly (PVB)” means an assembly consisting of an independently operating, internally loaded check valve and an independently operating loaded air inlet valve located on the discharge side of the check valve. This assembly is to be equipped with properly located resilient seated test cocks and tightly closing resilient seated shutoff valves attached at each end of the assembly. This assembly is designed to protect against a non-health hazard or a health hazard under backsiphonage conditions only.
(127) “Provisional Delineation” means approximating the wellhead protection area for a well by using the wellhead protection area from another well in the same hydrogeologic setting or by using generalized values for the aquifer characteristics to generate an approximate wellhead protection area for the well. Used only for the purpose of evaluating potential siting of new or future groundwater sources. Not an acceptable way to formally delineate a wellhead protection area.
(128) “Public Health Hazard” means a condition, device or practice which is conducive to the introduction of waterborne disease organisms, or harmful chemical, physical, or radioactive substances into a public water system, and which presents an unreasonable risk to health.
(129) “Public Water System” means a system for the provision to the public of piped water for human consumption, if such system has more than three service connections, or supplies water to a public or commercial establishment that operates a total of at least 60 days per year, and that is used by 10 or more individuals per day. Public water system also means a system for the provision to the public of water through constructed conveyances other than pipes to at least 15 service connections or regularly serves at least 25 individuals daily at least 60 days of the year. A public water system is either a "Community Water System", a "Transient Non-Community Water System", a "Non-Transient Non-Community Water System" or a "State Regulated Water System".
(130) “Purchasing Water System” means a public water system which obtains its water in whole or in part from another public water system.
(131) “Recharge” means the process by which water is added to a zone of saturation, usually by downward infiltration from the surface.

(132) “Recharge Area” means a land area in which water percolates to the zone of saturation through infiltration from the surface.
(133) “Recovery” means the rise in water level in a well from the pumping level towards the original static water level after pumping has been discontinued.
(134) “Reduced Pressure Principle Backflow Prevention Assembly (RP)” means an assembly containing two independently acting approved check valves, together with a hydraulically operating, mechanically independent pressure differential relief valve located between the check valves and at the same time below the first check valve. The unit shall include properly located resilient seated test cocks and tightly closing resilient seated shutoff valves at each end of the assembly. This assembly is designed to protect against a non-health hazard or a health hazard.
(135) “Reduced Pressure Principle-Detector Backflow Prevention Assembly (RPDA)” means a specifically designed assembly composed of a line size approved reduced pressure principle backflow prevention assembly with a bypass containing a specific water meter and an approved reduced pressure principle backflow prevention assembly. The meter shall register accurately for only very low rates of flow up to three gallons per minute and shall show a registration for all rates of flow. This assembly is designed to protect against a non-health hazard or a health hazard.
(136) “Rem” means the unit of dose equivalent from ionizing radiation to the total body or any internal organ or organ system. A “millirem (mrem)” is 1/1000 of a rem.
(137) “Repeat Compliance Period” means any subsequent compliance period after the initial compliance period.
(138) “Residual disinfectant concentration” means the concentration of disinfectant measured in mg/l in a representative sample of water.
(139) “Responsible Management Authority” means the Public Water System whose water supply is being protected and any government entity having management, rule or ordinance-making authority to implement wellhead protection management strategies within the wellhead protection area. The Responsible Management Authority is responsible for implementation of the Wellhead Protection Plan and includes cities, counties, special districts, Indian tribes, state/federal entities as well as public water systems.
(140) “Safe Drinking Water” means water which has sufficiently low concentrations of microbiological, inorganic chemical, organic chemical, radiological or physical substances so that individuals drinking such water at normal levels of consumption, will not be exposed to disease organisms or other substances which may produce harmful physiological effects.
(141) “Sanitary Survey” means an on-site review of the water source, watershed, facilities, equipment, operation and maintenance of a public water system for

the purpose of evaluating the capability of the water system to produce and distribute safe drinking water.

(142) "Secondary Contaminant" means those contaminants, which, at the levels generally found in drinking water, do not present an unreasonable risk to health, but do:
  (a) Have adverse effects on the taste, odor and color of water; and/or
  (b) Produce undesirable staining of plumbing fixtures; and/or
  (c) Interfere with treatment processes applied by water suppliers.

(143) "Secondary Maximum Contaminant Level (SMCL)" means the level of a secondary contaminant which when exceeded may adversely affect the aesthetic quality of the drinking water which thereby may deter public acceptance of drinking water provided by public water systems or may interfere with water treatment methods.

(144) "Sedimentation" means a process for removal of solids before filtration by gravity or separation.

(145) "Sensitivity" means the intrinsic characteristics of a drinking water source such as depth to the aquifer for groundwater or highly erodible soils in a watershed that increase the potential for contamination to take place if a contaminant source is present.

(146) "Service Connection" means the piping connection by means of which water is conveyed from a distribution main of a public water system to a user's premise. For a community water system, the portion of the service connection that conveys water from the distribution main to the user's property line, or to the service meter, where provided, is under the jurisdiction of the water supplier.

(147) "Single Connection System" means a public water system serving only one installation, such as a restaurant, campground or place of employment.

(148) "Single Family Structure" means a building constructed as a single-family residence that is currently used as either a residence or a place of business.

(149) "Source Water Assessment" means the information compiled by the Department and the Department of Environmental Quality (DEQ), consisting of the delineation, inventory and susceptibility analyses of the drinking water source, which enable public water systems to develop and implement drinking water protection plans.

(150) "Specific Ultraviolet Absorption (SUVA) at 254 nanometers" means an indicator of the humic content of water as a calculated parameter obtained by dividing a sample's ultraviolet absorption at a wavelength of 254 nanometers (UV254) by its concentration of dissolved organic carbon (DOC) (in milligrams per liter).

(151) "Spill Resistant Pressure Vacuum Breaker Backsiphonage Prevention Assembly (SVB)" means an assembly containing an independently operating, internally loaded check valve and independently operating loaded air inlet

valve located on the discharge side of the check valve. The assembly is to be equipped with a properly located resilient seated test cock, a properly located bleed/vent valve, and tightly closing resilient seated shutoff valves attached at each end of the assembly. This assembly is designed to protect against a non-health hazard or a health hazard under a backsiphonage condition only.

(152) "Spring" means a naturally occurring discharge of flowing water at the ground surface, or into surface water. Springs can be derived from groundwater or they can be surface water influenced.

(153) "Stand-alone Fire Suppression System" means a piping system within a premise intended to only serve as a fire protection system separated from the potable water system.

(154) "State Regulated Water System" means a public water system, which serves 4 to 14 service connections or serves 10 to 24 people. Monitoring requirements for these systems are the same as those for Transient Non-Community water systems.

(155) "Static Water Level" means the vertical distance from ground surface to the water level in the well when the well is at rest, i.e., the well has not been pumped recently and the water level is stable. The natural level of water in the well.

(156) "Surface Water" means all water, which is open to the atmosphere and subject to surface runoff.

(157) "Susceptibility" means the potential, as a result of the combination of land use activities and source water sensitivity that contamination of the drinking water source may occur.

(158) "Team" means the local Wellhead Protection team, which includes representatives from the Responsible Management Authorities and various interests and stakeholders potentially affected by the Wellhead Protection Plan.

(159) "Thermal Expansion" means the pressure increase due to a rise in water temperature that occurs in water piping systems when such systems become "closed" by the installation of a backflow prevention assembly or other means, and will not allow for expansion beyond that point of installation.

(160) "These Rules" means the Oregon Administrative Rules encompassed by OAR 333-061-0005 through 333-061-0098.

(161) "Time-of-Travel (TOT)" means the amount of time it takes groundwater to flow to a given well. The criterion that effectively determines the radius in the calculated fixed radius method and the up-gradient distance to be used for the analytical and numerical models during delineation of the wellhead protection area.

(162) "Too Numerous To Count (TNTC)" means that the total number of bacterial colonies exceeds 200 on a 47 mm diameter membrane filter used for coliform bacteria detection.

(163) “Total Organic Carbon (TOC)” means total organic carbon in milligrams per liter measured using heat, oxygen, ultraviolet irradiation, chemical oxidants, or combinations of these oxidants that convert organic carbon to carbon dioxide, rounded to two significant figures.
(164) “Transient Non-Community Water System” means a public water system that serves a transient population of 25 or more persons.
(165) “Turbidity” means a measure of the cloudiness of water caused by suspended particles. The units of measure for turbidity are nephelometric turbidity units (NTU).
(166) “Unconfined Well” means a well completed in an unconfined aquifer. More specifically, a well which produces water from a formation that is not overlaying by impermeable material. This well shall be constructed according to OAR Chapter 690, Division 200 "Well Construction and Maintenance" standards.
(167) “University of Southern California, Foundation for Cross-Connection Control and Hydraulic Research (USC FCCCHR)” is an agency that conducts laboratory and field tests to evaluate and grant “Certificates of Approval” to backflow prevention assemblies meeting approved standards.
(168) “Vadose Zone” means the zone between the ground surface and the water table where the available open spaces between soil and sediment particles, in rock fractures, etc., are most filled with air.
(169) “Variance” means official permission granted by the Department for public water systems to exceed maximum contaminant levels because the quality of the raw water is such that the best available treatment techniques are not capable of treating the water so that it complies with maximum contaminant levels, and there is no unreasonable risk to health.
(170) “Vault” means an approved enclosure above or below ground to house a backflow prevention assembly that complies with the local administrative authority having jurisdiction.
(171) “Virus” means a virus of fecal origin, which is infectious to humans by waterborne transmission.
(172) “Waiver” means official permission from the Department for a public water system to deviate from the construction standards set forth in these rules.
(173) “Water-bearing Zone” means that part or parts of the aquifer encountered during drilling that yield(s) water to a well.
(174) “Waterborne disease outbreak” means the significant occurrence of acute infectious illness, epidemiologically associated with the ingestion of water from a public water system which is deficient in treatment, as determined by the Department.

(175) “Water Supplier” means a person, group of persons, municipality, district, corporation or other entity, which owns or operates a public potable water system.
(176) “Water Source” means any lake, stream, spring, groundwater supply, impoundment or other source of water from which water is obtained for a public water system. In some cases, a public water system can be the source of supply for one or more other public water systems.
(177) “Water System” means a system for the provision of piped water for human consumption.
(178) “Water System Operations Manual” means a written document describing the actions and procedures necessary to operate and maintain the entire water system.
(179) “Water Table” means the upper surface of an unconfined aquifer, the surface of which is at atmospheric pressure and fluctuates seasonally. It is defined by the levels at which water stands in wells that penetrate the aquifer.
(180) “Well” means an artificial opening or artificially altered natural opening, however made, by which ground water is sought or through which ground water flows under natural pressure or is artificially withdrawn or injected, provided that this definition shall not include a natural spring, or wells drilled for the purpose of exploration or production of oil or gas.
(181) “Wellfield” means two or more drinking water wells, belonging to the same water system that are within 2,500 feet, or as determined by the Department, and produce from the same and no other aquifer.
(182) “Wellhead Protection” see Drinking Water Protection.
(183) “Wellhead Protection Area (WHPA)” see Drinking Water Protection Area.
(184) “Wellhead Protection Plan” see Drinking Water Protection Plan.
[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 448
Stats. Implemented: ORS 431.110, ORS 431.150, ORS 448.131, ORS 448.150, ORS 448.273 & ORS 448.279

333-061-0025 Responsibilities of Water Suppliers
Water suppliers are responsible for taking all reasonable precautions to assure that the water delivered to water users does not exceed maximum contaminant levels, to assure that water system facilities are free of public health hazards, and to assure that water system operation and maintenance are performed as required by these rules. This includes, but is not limited to, the following:
(1) Routinely collect and submit water samples for laboratory analyses at the frequencies prescribed by OAR 333-061-0036;

(2) Take immediate corrective action when the results of analyses or measurements indicate that maximum contaminant levels have been exceeded and report the results of these analyses as prescribed by OAR 333-061-0040;
(3) Continue to report as prescribed by OAR 333-061-0040, the results of analyses or measurements which indicate that maximum contaminant levels have not been exceeded;
(4) Notify all customers of the system, as well as the general public in the service area, when the maximum contaminant levels have been exceeded;
(5) Notify all customers served by the system when the reporting requirements are not being met, or when public health hazards are found to exist in the system, or when the operation of the system is subject to a permit or a variance;
(6) Maintain monitoring and operating records and make these records available for review when the system is inspected;
(7) Maintain a pressure of at least 20 pounds per square inch (psi) at all service connections at all times;
(8) Follow-up on complaints relating to water quality from users and maintain records and reports on actions undertaken;
(9) Conduct an active program for systematically identifying and controlling cross connections;
(10) Submit, to the Department, plans prepared by a professional engineer registered in Oregon for review and approval before undertaking the construction of new water systems or major modifications to existing water systems, unless exempted from this requirement;
(11) Assure that the water system is in compliance with OAR 333-061-0205 relating to certification of water system operators.
(12) Assure that Transient Non-Community water systems utilizing surface water sources or sources under the influence of surface water are in compliance with OAR 333-061-0065(2)(c) relating to required special training.

Stat. Auth.: ORS 431 & 448.131
Stats. Implemented:

Partial 333-061-0030 Maximum Contaminant Levels And Action Levels (excerpt (4)(d)(H) related to Cross Connection)

(4) Maximum microbiological contaminant levels for all public water systems are as follows:
    (d) A water system may demonstrate to the Department that a violation of the total coliform MCL is due to a persistent growth of total coliforms in the distribution system rather than fecal or pathogenic contamination, a treatment lapse or deficiency, or a problem in the operation or maintenance of the distribution system. The system making the demonstration may use the health effects language of OAR 333-061-

0097(4)(d) in the required public notice in addition to the mandatory language of OAR 333-061-0097(4)(a). This demonstration, made by the system in writing and submitted to the Department for review and approval, shall show to the satisfaction of the Department that the system meets the following conditions:

(A) No occurrence of *E. coli* in distribution system samples;
(B) No occurrence of coliforms at the entry point to the distribution system;
(C) The system meets treatment requirements prescribed in OAR 333-061-0032 as applicable;
(D) The system meets the turbidity MCL, if surface water sources are used;
(E) The system maintains a detectable disinfectant residual in the distribution system;
(F) The system has no history of waterborne disease outbreaks;
(G) The system has addressed requirements and recommendations of the previous sanitary survey conducted by the Department; and
(H) The system fully complies with cross connection control program requirements.

Statutory Authority: 448.131
Stats. Implemented: ORS 431.110, ORS 431.150, ORS 448.131, ORS 448.150 & 448.273

Partial 333-061-0045 Variances (excerpt (11)(i) related to Cross Connection)

(11) The Department may grant a variance from the requirements of OAR 333-061-0030(4) "Microbiological Contaminants" for any system that demonstrates to the satisfaction of the Department that violations of the total coliform MCL are due to persistent growth of total coliform in the distribution system rather than fecal or pathogenic contamination, a treatment lapse or deficiency, or a problem in the operation or maintenance of the distribution system. This demonstration, made by the system in writing and submitted to the Department for review, shall show that the system meets the following conditions:

(a) The system meets treatment level requirements of OAR 333-061-0032,
(b) The system shows no occurrence of coliforms at the entry point to the distribution system,
(c) The system meets the turbidity MCL,
(d) The system maintains a detectable disinfectant residual in the distribution system,
(e) The system has no history of waterborne disease outbreaks using the current treatment and source configuration,

(f) The system maintains regular contact with the Department to assess possible illness outbreaks,
(g) The system complies with coliform monitoring requirements and shows no occurrence of E. coli positive samples during the previous six months,
(h) The system has addressed requirements and recommendations of the previous sanitary survey conducted by the Department,
(i) The system fully complies with cross connection control program requirements contained in OAR 333-061-0070,
(j) The system agrees to submit a biofilm control plan to the Department within twelve months of the granting of the first request for a variance,
(k) The system monitors heterotrophic plate count weekly in conjunction with routine coliform sample collection and maintains HPC counts at levels less than 500 colonies per ml at any point where the disinfectant residual is less than 0.2 mg/l, and
(l) The system has a microbiological contaminant sampling plan approved by the Department.

Statutory Authority: ORS 448.135
Stats. Implemented:
Hist.: HD 9-1981(Temp), f. & ef. 6-30-81; HD 17-1981(Temp), f. & ef. 8-28-81; HD 4-1982, f. & ef. 2-26-82; HD 2-1983, f. & ef. 2-23-83; HD 11-1985, f. & ef. 7-2-85; HD 30-1985, f. & ef. 12-4-85; HD 9-1989, f. & cert. ef. 11-13-89; HD 26-1990, f. 12-26-90, cert. ef. 12-29-90; HD 9-1991(Temp), f. & cert. ef. 6-24-91; HD 1-1992, f. & cert. ef. 3-5-92; HD 12-1992, f. & cert. ef. 12-7-92; HD 3-1994, f. & cert. ef. 1-14-94; HD 1-1996, f. 1-2-96, cert. ef. 1-5-96; OHD 17-2002, f. & cert. ef. 10-25-02; PH 12-2003, f. & cert. ef. 8-15-03

Partial 333-061-0061 Capacity Requirements for Public Water Systems (excerpt (3)(b)(B)(ii) and (3)(b)(C)(ii) related to Cross Connection and the Drinking Water State Revolving Loan Fund)

(1) Water system capacity is defined as the technical, managerial, and financial capability of the water system necessary to plan for, achieve, and maintain compliance with applicable drinking water standards.
(3) Capacity requirements for public water systems applying for a loan from the Drinking Water State Revolving Loan Fund.
(a) All public water systems qualifying for a Drinking Water State Revolving Fund loan must receive a capacity assessment for technical and managerial capacity from the Department, and financial capacity from the Oregon Economic & Community Development Department through the loan application process, prior to contract execution.

(b) All deficiencies identified in the capacity assessment must be corrected such that:

(A) Those deficiencies identified in the capacity assessment as major deficiencies must be corrected prior to contract execution. Major deficiencies include but are not limited to the following:

(i) Under technical capacity, major infrastructure deficiencies identified in the sanitary survey and not corrected as a part of this project or identified as a deficiency under paragraph (E) of this subsection; or

(ii) Under managerial capacity, no certified operator and no contract or agreement for operator services from another water system or management agency; or

(iii) Under financial capacity, inappropriate financial statements, lack of a capital financing program, or an inadequate rate structure to cover necessary system operation, debt service, or capital replacement.

(B) Those deficiencies identified in the capacity assessment as loan conditions must be corrected as a part of the contract prior to contract completion or on a schedule set and/or approved and tracked by the Department or its designee. Loan condition deficiencies are deficiencies which may take considerable staff or contractor time and possibly some funding to correct. Loan condition deficiencies include but are not limited to the following:

(i) Under technical capacity, inadequate or no water rights, incomplete installation of water use meters, incomplete or no engineering drawings of the water system, out-of-date or no master plan, or incomplete or no plan review on prior construction projects; or

(ii) Under managerial capacity, having an operator at a lower level than required in responsible charge of the water system, no written emergency response plan, no written water conservation program if required by the Water Resources Department under OAR 690-086-0010 through 690-086-0920, no written water system operations manual, or no cross connection program.

(C) Those deficiencies identified in the capacity assessment as short term deficiencies must be corrected prior to contract completion and will be tracked by the Department. Short term deficiencies are deficiencies which can be quickly corrected with additional staff attention. Short term deficiencies include but are not limited to the following:

(i) Under technical capacity, water quality monitoring is incomplete, no coliform sample plan or site map, or no written water quality monitoring plan; or

(ii) Under managerial capacity, no annual cross connection summary report if required, or no consumer confidence report if required.

(D) Those deficiencies identified in the capacity assessment as corrected with the project will be considered by the Department as corrected with contract completion.

(E) All other deficiencies identified in the capacity assessment must be identified and established as a future construction project in the water system master plan, feasibility study, or other such document in order to be considered by the Department as corrected in the future.

(c) Funding to correct a deficiency identified as a loan condition under paragraph (b)(B) of this section may be included as part of the project contract under the Drinking Water State Revolving Fund, if that part of the project to correct the deficiency qualifies under the terms of the Drinking Water State Revolving Fund.

Stat. Auth.: ORS 431 & 448
Stats. Implemented: ORS 431.110, 431.150, 448.131, 448.150, 448.268 & 448.273
Hist.: OHD 4-1999, f. 7-14-99, cert. ef. 7-15-99; OHD 17-2002, f. & cert. ef. 10-25-02; PH 16-2004(Temp), f. & cert. ef. 4-9-04 thru 10-5-04; PH 20-2004, f. & cert. ef. 6-18-04

Partial 333-061-0065 Operation and Maintenance (excerpt (4)(a)(K) related to Cross Connection)

(4) Documents and records:

(a) The following documents and records shall be retained by the water supplier at the Community water system facility and shall be available when the system is inspected or upon request by the Department:

(K) Records of cross connection control and backflow prevention device testing, where applicable;

Stat. Auth.: ORS 431 &448.131
Stats. Implemented: ORS 431.110, 431.150, 448.131, 448.150, 448.273 & 448.279
Hist.: HD 106, f. & ef. 2-6-76; HD 17-1981(Temp), f. & ef. 8-28-81; HD 4-1982, f. & ef. 2-26-82; Renumbered from 333-042-0235; HD 2-1983, f. & ef. 2-23-83; HD 20-1983, f. 10-20-83, ef. 11-1-83; HD 1-1988, f. & cert. ef. 1-6-88; HD 9-1989, f. & cert. ef. 11-13-89; HD 26-1990, f. 12-26-90, cert. ef. 12-29-90; HD 7-1992, f. & cert. ef. 6-9-92; HD 1-1996, f. 1-2-96, cert. ef. 1-5-96; OHD 17-2002, f. & cert. ef. 10-25-

02; PH 16-2004(Temp), f. & cert. ef. 4-9-04 thru 10-5-04; PH 20-2004, f. & cert. ef. 6-18-04

333-061-0070 Cross Connection Control Requirements

(1) Water suppliers shall undertake cross connection control programs to protect the public water systems from pollution and contamination.

(2) The water supplier's responsibility for cross connection control shall begin at the water supply source, include all public treatment, storage, and distribution facilities under the water supplier's control, and end at the point of delivery to the water user's premise.

(3) Water suppliers shall develop and implement cross connection control programs that meet the minimum requirements set forth in these rules.

(4) Water suppliers shall develop a procedure to coordinate cross connection control requirements with the appropriate local administrative authority having jurisdiction.

(5) The water supplier shall ensure that inspections of approved air gaps, approved devices, and inspections and tests of approved backflow prevention assemblies protecting the public water system are conducted:
   (a) At the time of installation, any repair or relocation;
   (b) At least annually;
   (c) More frequently than annually for approved backflow prevention assemblies that repeatedly fail, or are protecting health hazard cross connections, as determined by the water supplier;
   (d) After a backflow incident; or
   (e) After an approved air gap is re-plumbed.

(6) Approved air gaps, approved devices, or approved backflow prevention assemblies, found not to be functioning properly shall be repaired, replaced or re-plumbed by the water user or premise owner, as defined in the water supplier's local ordinance or enabling authority, or the water supplier may take action in accordance with subsection 9(a) of these rules.

(7) A water user or premise owner who obtains water from a water supplier must notify the water supplier if they add any chemical or substance to the water.

(8) Premise isolation requirements:
   (a) For service connections to premises listed or defined in Table 32 (Premises Requiring Isolation), the water supplier shall ensure an approved backflow prevention assembly or an approved air gap is installed;
      (A) Premises with cross connections not listed or defined in Table 32 (Premises Requiring Isolation), shall be individually evaluated. The water supplier shall require the installation of an approved backflow prevention assembly or an approved air gap

commensurate with the degree of hazard on the premise, as defined in Table 33 (Backflow Prevention Methods);

(B) In lieu of premise isolation, the water supplier may accept an in-premise approved backflow prevention assembly as protection for the public water system when the approved backflow prevention assembly is installed, maintained and tested in accordance with the Oregon Plumbing Specialty Code and these rules.

(b) Where premise isolation is used to protect against a cross connection, the following requirements apply;

(A) The water supplier shall:

(i) Ensure the approved backflow prevention assembly is installed at a location adjacent to the service connection or point of delivery;

(ii) Ensure any alternate location used must be with the approval of the water supplier and must meet the water supplier's cross connection control requirements; and

(iii) Notify the premise owner and water user, in writing, of thermal expansion concerns.

(B) The premise owner shall:

(i) Ensure no cross connections exist between the point of delivery from the public water system and the approved backflow prevention assemblies, when these are installed in an alternate location; and

(ii) Assume responsibility for testing, maintenance, and repair of the installed approved backflow prevention assembly to protect against the hazard.

(c) Where unique conditions exist, but not limited to, extreme terrain or pipe elevation changes, or structures greater than three stories in height, even with no actual or potential health hazard, an approved backflow prevention assembly may be installed at the point of delivery; and

(d) Where the water supplier chooses to use premise isolation by the installation of an approved backflow prevention assembly on a one- or two-family dwelling under the jurisdiction of the Oregon Plumbing Specialty Code and there is no actual or potential cross connection, the water supplier shall:

(A) Install the approved backflow prevention assembly at the point of delivery;

(B) Notify the premise owner and water user in writing of thermal expansion concerns; and

(C) Take responsibility for testing, maintenance and repair of the installed approved backflow prevention assembly.

(9) In community water systems, water suppliers shall implement a cross connection control program directly, or by written agreement with another agency experienced in cross connection control. The local cross connection program shall consist of the following elements:

(a) Local ordinance or enabling authority that authorizes discontinuing water service to premises for:

(A) Failure to remove or eliminate an existing unprotected or potential cross connection;

(B) Failure to install a required approved backflow prevention assembly;

(C) Failure to maintain an approved backflow prevention assembly; or

(D) Failure to conduct the required testing of an approved backflow prevention assembly.

(b) A written program plan for community water systems with 300 or more service connections shall include the following:

(A) A list of premises where health hazard cross connections exist, including, but not limited to, those listed in Table 32 (Premises Requiring Isolation);

(B) A current list of certified cross connection control staff members;

(C) Procedures for evaluating the degree of hazard posed by a water user's premise;

(D) A procedure for notifying the water user if a non-health hazard or health hazard is identified, and for informing the water user of any corrective action required;

(E) The type of protection required to prevent backflow into the public water supply, commensurate with the degree of hazard that exists on the water user's premise, as defined in Table 33 (Backflow Prevention Methods);

(F) A description of what corrective actions will be taken if a water user fails to comply with the water supplier's cross connection control requirements;

(G) Current records of approved backflow prevention assemblies installed, inspections completed, backflow prevention assembly test results on backflow prevention assemblies and verification of current Backflow Assembly Tester certification; and

(H) A public education program about cross connection control.

(c) The water supplier shall prepare and submit a cross connection control Annual Summary Report to the Department, on forms provided by the Department, before the last working day of March each year.

(d) In community water systems having 300 or more service connections, water suppliers shall ensure at least one person is certified as a Cross

Connection Control Specialist, unless specifically exempted from this requirement by the Department.

(10) Fees: Community water systems shall submit to the Department an annual cross connection program implementation fee, based on the number of service connections, as follows:

Service Connections:	Fee:
15-99	$30.
100-999	$75.
1,000-9,999	$200.
10,000 or more	$350.

(a) Billing invoices will be mailed to water systems in the first week of November each year and are due by January first of the following year;

(b) Fees are payable to Department of Human Services by check or money order;

(c) A late fee of 50% of the original amount will be added to the total amount due and will be assessed after January 31 of each year.

(11) In transient or non-transient non-community water systems, the water supplier that owns and/or operates the system shall:

(a) Ensure no cross connections exist, or are isolated from the potable water system with an approved backflow prevention assembly, as required in section (12) of these rules;

(b) Ensure approved backflow prevention assemblies are installed at, or near, the cross connection; and

(c) Conduct a cross connection survey and inspection to ensure compliance with these rules. All building permits and related inspections are to be made by the Department of Consumer and Business Services, Building Codes Division, as required by ORS 447.020.

(12) Approved backflow prevention assemblies required under these rules shall be assemblies approved by the University of Southern California, Foundation for Cross Connection Control and Hydraulic Research, or other equivalent testing laboratories approved by the Department.

(13) Backflow prevention assemblies installed before the effective date of these rules that were approved at the time of installation, but are not currently approved, shall be permitted to remain in service provided the assemblies are not moved, the piping systems are not significantly remodeled or modified, the assemblies are properly maintained, and they are commensurate with the degree of hazard they were installed to protect. The assemblies must be tested at least annually and perform satisfactorily to the testing procedures set forth in these rules.

(14) Tests performed by Department-certified Backflow Assembly Testers shall be in conformance with procedures established by the University of Southern California, Foundation for Cross Connection Control and Hydraulic Research, Manual of Cross Connection Control, 9th Edition, December 1993, or other equivalent testing procedures approved by the Department.

(15) Backflow prevention assemblies shall be tested by Department-certified Backflow Assembly Testers, except as otherwise provided for journeyman plumbers or apprentice plumbers in OAR 333-061-0072 of these rules (Backflow Assembly Tester Certification). The Backflow Assembly Tester shall provide a copy of each completed test report to the water user or premise owner, and the water supplier:
  (a) Within 10 working days; and
  (b) The test reports will be in a manner and form acceptable to the water supplier.

(16) All approved backflow prevention assemblies subject to these rules shall be installed in accordance with OAR 333-061-0071 and the Oregon Plumbing Specialty Code.

(17) The Department shall establish an advisory board for cross connection control issues consisting of not more than nine members, and including representation from the following:
  (a) Oregon-licensed Plumbers;
  (b) Department-certified Backflow Assembly Testers;
  (c) Department-certified Cross Connection Specialists;
  (d) Water Suppliers;
  (e) The general public;
  (f) Department-certified Instructors of Backflow Assembly Testers or Cross Connection Specialists;
  (g) Backflow assembly manufacturers or authorized representatives;
  (h) Engineers experienced in water systems, cross connection control and/or backflow prevention; and
  (i) Oregon-certified Plumbing Inspectors.

TABLE 32 PREMISES REQUIRING ISOLATION* BY AN APPROVED AIR GAP OR REDUCED PRESSURE PRINCIPLE TYPE OF ASSEMBLY HEALTH HAZARD
1. Agricultural (e.g. farms, dairies)
2. Beverage bottling plants**
3. Car washes
4. Chemical plants
5. Commercial laundries and dry cleaners
6. Premises where both reclaimed and potable water are used
7. Film processing plants
8. Food processing plants
9. Medical centers (e.g., hospitals, medical clinics, nursing homes, veterinary clinics, dental clinics, blood plasma centers)
10. Premises with irrigation systems that use the water supplier's water with chemical additions (e.g., parks, playgrounds, golf courses, cemeteries, housing estates)
11. Laboratories
12. Metal plating industries
13. Mortuaries
14. Petroleum processing or storage plants
15. Piers and docks
16. Radioactive material processing plants and nuclear reactors
17. Wastewater lift stations and pumping stations
18. Wastewater treatment plants
19. Premises with piping under pressure for conveying liquids other than potable water and the piping is installed in proximity to potable water piping
20. Premises with an auxiliary water supply that is connected to a potable water supply
21. Premises where the water supplier is denied access or restricted access for survey
22. Premises where the water is being treated by the addition of chemical or other additives

* Refer to OAR 333-061-0070(8) Premise Isolation Requirements.

** A Double Check Valve Backflow Prevention Assembly could be used if the water supplier determines there is only a non-health hazard at a beverage bottling plant.

TABLE 33 BACKFLOW PREVENTION METHODS USED FOR PREMISE ISOLATION	
DEGREE OF IDENTIFIED HAZARD	
Non-Health Hazard (Pollutant)	Health Hazard (Contaminant)
BACKSIPHONAGE OR BACKPRESSURE	BACKSIPHONAGE OR BACKPRESSURE
Air Gap (AG)	Air Gap (AG)
Reduced Pressure Principle Backflow Prevention Assembly (RP)	Reduced Pressure Principle Backflow Prevention Assembly (RP)
Reduced Pressure Principle-Detector Backflow Prevention Assembly (RPDA)	Reduced Pressure Principle-Detector Backflow Prevention Assembly (RPDA)
Double Check Valve Backflow Prevention Assembly (DC)	
Double Check-Detector Backflow Prevention Assembly (DCDA)	

Statutory Authority: ORS 431 & ORS 448
Stats. Implemented: ORS 431.110, ORS 431.150, ORS 448.131, ORS 448.150, ORS 448.268, ORS 448.271, ORS 448.273, ORS 448.279, ORS 448.295 & ORS 448.300

333-061-0071 Backflow Prevention Assembly Installation and Operation Standards

(1) Any approved backflow prevention assembly required by OAR 333-061-0070 shall be installed in a manner that:
   (a) Facilitates its proper operation, maintenance, inspection, and in-line testing using standard installation procedures approved by the Department, such as, but not limited to, University of Southern California, Manual of Cross-Connection Control, 9th Edition, the Pacific Northwest Section American Water Works Association, Cross Connection Control Manual, 6th Edition, or the local administrative authority having jurisdiction;
   (b) Precludes the possibility of continuous submersion of an approved backflow prevention assembly, and precludes the possibility of any submersion of the relief valve on a reduced pressure principle backflow prevention assembly; and
   (c) Maintains compliance with all applicable safety regulations and the Oregon Plumbing Specialty Code.

(2) For premise isolation installation:
   (a) The approved backflow prevention assembly shall be installed at a location adjacent to the service connection or point of delivery; or
   (b) Any alternate location must be with the advance approval of the water supplier and must meet the water supplier's cross connection control requirements; and
   (c) The premise owner shall ensure no cross connections exist between the point of delivery from the public water system and the approved backflow prevention assembly.

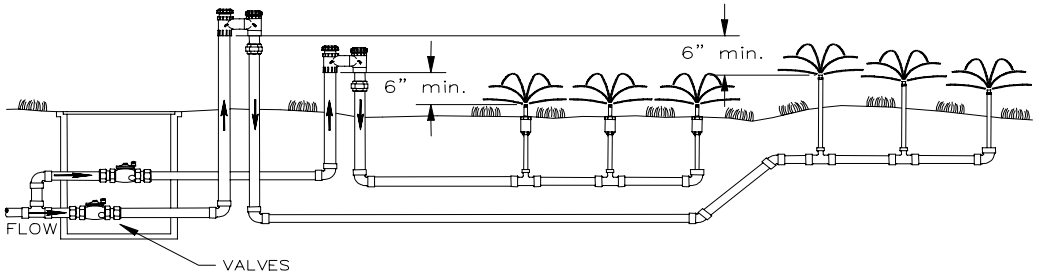
(3) Bypass piping installed around any approved backflow prevention assembly must be equipped with an approved backflow prevention assembly to:
   (a) Afford at least the same level of protection as the approved backflow prevention assembly being bypassed; and
   (b) Comply with all requirements of these rules.

(4) All Oregon Plumbing Specialty Code approved residential multi-purpose fire suppression systems constructed of potable water piping and materials do not require a backflow prevention assembly.

(5) Stand-alone fire suppression systems shall be protected commensurate with the degree of hazard, as defined in Table 33 (Backflow Prevention Methods).

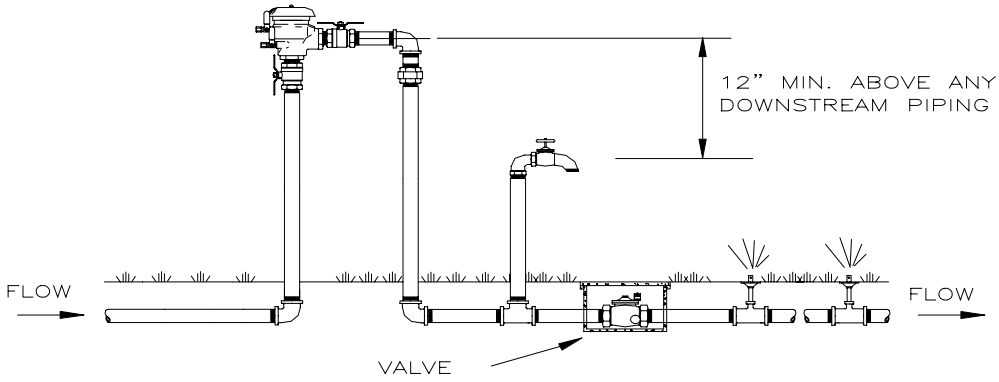
(6) Stand-alone irrigation systems shall be protected commensurate with the degree of hazard, as defined in Table 33 (Backflow Prevention Methods).

(7) An Atmospheric Vacuum Breaker (AVB) shall:



(a) Have absolutely no means of shut-off on the downstream or discharge side of the atmospheric vacuum breaker;
(b) Not be installed in dusty or corrosive atmospheres;
(c) Not be installed where subject to flooding;
(d) Be installed a minimum of 6 inches above the highest downstream piping and outlets;
(e) Be used intermittently;
(f) Have product and material approval under the Oregon Plumbing Specialty Code for non-testable devices.
(g) Not be pressurized for more than 12 hours in any 24-hour period; and
(h) Be used to protect against backsiphonage only, not backpressure.

(8) A Pressure Vacuum Breaker Backsiphonage Prevention Assembly (PVB) or Spill-Resistant Pressure Vacuum Breaker Backsiphonage Prevention Assembly (SVB) shall:

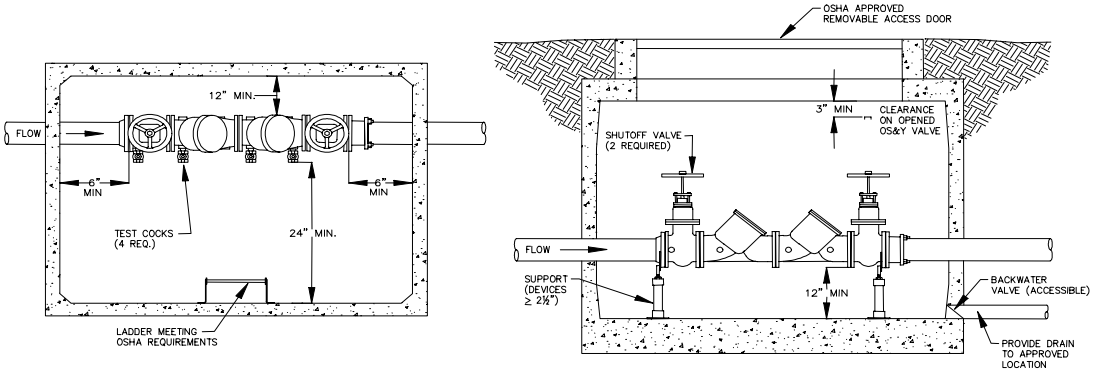


(a) Be installed where occasional water discharge from the assembly caused by pressure fluctuations will not be objectionable;
(b) Have adequate spacing available for maintenance and testing;
(c) Not be subject to flooding;
(d) Be installed a minimum of 12 inches above the highest downstream piping and outlets;

(e) Have absolutely no means of imposing backpressure by a pump or other means. The downstream side of the pressure vacuum breaker backsiphonage prevention assembly or spill-resistant pressure vacuum breaker backsiphonage prevention assembly may be maintained under pressure by a valve; and

(f) Be used to protect against backsiphonage only, not backpressure.

(9) A Double Check Valve Backflow Prevention Assembly (DC) or Double Check Detector Backflow Prevention Assembly (DCDA):



(a) Shall conform to bottom and side clearances when the assembly is installed inside a building;

(b) May be installed vertically as well as horizontally provided the assembly is specifically listed for that orientation in the Department's Approved Backflow Prevention Assembly List.

(c) May be installed below grade in a vault, provided that water-tight fitted plugs or caps are installed in the test cocks, and the assembly shall not be subject to continuous immersion;

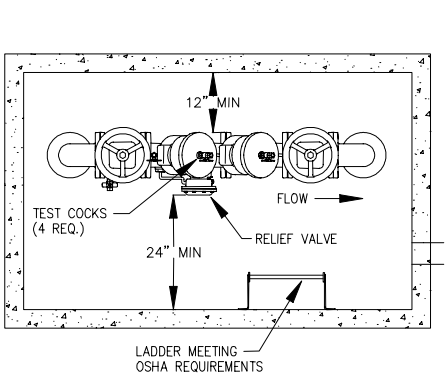
(d) Shall not be installed at a height greater than 5 feet unless there is a permanently installed platform meeting Oregon Occupational Safety and Health Administration (OR-OSHA) standards to facilitate servicing the assembly;

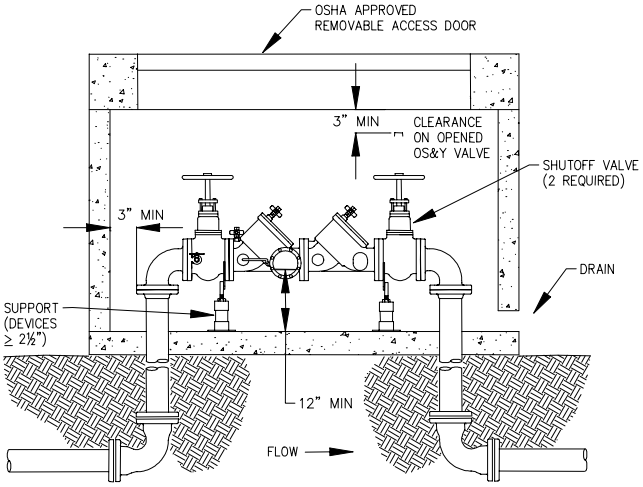
(e) May be installed with reduced clearances if the pipes are 2 inches in diameter or smaller, provided that they are accessible for testing and repairing, and approved by the appropriate local administrative authority having jurisdiction;

(f) Shall have adequate drainage provided except that the drain shall not be directly connected to a sanitary or storm water drain. Installers shall check with the water supplier and appropriate local administrative authority having jurisdiction for additional requirements;

(g) Shall be protected from freezing when necessary; and
(h) Be used to protect against non-health hazards under backsiphonage and backpressure conditions.

(10) A Reduced Pressure Principle Backflow Prevention Assembly (RP) or Reduced Pressure Principle-Detector Backflow Prevention Assembly (RPDA):





(a) Shall conform to bottom and side clearances when the assembly is installed inside a building. Access doors may be provided on the side of an above-ground vault;
(b) Shall always be installed horizontally, never vertically, unless they are specifically approved for vertical installation;
(c) Shall always be installed above the 100-year (1%) flood level unless approved by the appropriate local administrative authority having jurisdiction;
(d) Shall never have extended or plugged relief valves;
(e) Shall be protected from freezing when necessary;
(f) Shall be provided with an approved air gap drain;
(g) Shall not be installed in an enclosed vault or box unless a bore-sighted drain to daylight is provided;
(h) May be installed with reduced clearances if the pipes are 2 inches in diameter or smaller, are accessible for testing and repairing, and approved by the appropriate local administrative authority having jurisdiction;
(i) Shall not be installed at a height greater than 5 feet unless there is a permanently installed platform meeting Oregon Occupational Safety and Health Administration (OR-OSHA) standards to facilitate servicing the assembly; and

(j) Be used to protect against a non-health hazard or health hazard for backsiphonage or backpressure conditions.

Statutory Authority: ORS 431 & ORS 448
Stats. Implemented:: ORS 431.110, ORS 431.150, ORS 448.131, ORS 448.150, ORS 448.268 & ORS 448.273

333-061-0072 Backflow Assembly Tester Certification

(1) The Department shall certify individuals who successfully complete all the requirements of these rules for testing backflow prevention assemblies. Only persons certified by the Department to test backflow prevention assemblies shall perform the required field-testing on backflow prevention assemblies, except as otherwise provided that:
   (a) Journeyman plumbers defined as those who hold a certificate of competency issued under ORS 693 or apprentice plumbers, as defined under ORS 693.010; and
   (b) Journeyman plumbers or apprentice plumbers who test backflow prevention assemblies shall satisfactorily complete a Department-approved Backflow Assembly Tester training course, according to rules adopted by the Director of Consumer and Business Services.

(2) Requirements for initial application for Backflow Assembly Tester certification shall include:
   (a) Satisfactory completion of a Department-approved Backflow Assembly Tester training course within 12 months prior to the Department receiving the applicant’s completed application;
   (b) Satisfactory completion of all written and physical-performance examinations, including questions specific to OAR 333-061-0070 through 333-061-0073, administered by a Department-approved certification agency;
      (A) A minimum score of 75% is required to pass the Department-approved Backflow Assembly Tester written examination;
      (B) A minimum score of 90% is required to pass the Department-approved Backflow Assembly Tester physical-performance examination; and
      (C) The Department will make available a list of approved certification training and testing sources.
   (c) Registration with the Construction Contractor's Board or licensure with the Landscape Contractor's Board, as required by ORS 448.279(2);
   (d) Submission of proof of high school graduation or equivalent;
   (e) Submission of a completed initial application with all required documentation as specified on the initial application form and in these rules; and

(f) Submission of an initial application fee as defined in OAR 333-061-0072(5).

(3) Requirements for Backflow Assembly Tester certification renewal shall include:

(a) All Backflow Assembly Tester certificates will expire on June 30 of every odd-numbered year, beginning June 30, 2005. Backflow Assembly Testers can only perform tests if they possess a current, valid certificate;

(b) Satisfactory completion of 0.5 CEU in backflow prevention-related fields taken at a Department-approved certification training agency within the 2-year period immediately prior to the date of the certification renewal application;

(c) Satisfactory completion of all written and physical-performance examinations, including questions specific to OAR 333-061-0070 through 333-061-0073, administered by a Department-approved certification agency;

(A) A minimum score of 75% is required to pass the Department-approved Backflow Assembly Tester written examination;

(B) A minimum score of 90% is required to pass the Department-approved Backflow Assembly Tester physical-performance examination; and

(C) The Department will make available a list of approved certification training and testing sources.

(d) Registration with the Construction Contractor's Board or licensure with the Landscape Contractor's Board, as required by ORS 448.279(2);

(e) Submission of yearly test gauge calibration reports performed in the same month every year, as determined by the Backflow Assembly Tester;

(f) Submission of a completed renewal application with all required documentation as specified on the renewal application form and in these rules;

(g) Submission of a renewal application fee, as defined in OAR 333-061-0072(5);

(h) The Department may grant certification renewal without a reinstatement fee for up to 30 days after the expiration date of a certificate. A reinstatement fee of $50 will be added to the renewal fee for all renewal application fees received after the 30-day period; and

(i) A Backflow Assembly Tester who does not renew within 12 months of the expiration date of his or her certificate will be required to meet all requirements of an initial applicant in section (2) of these rules.

(4) The Department may issue Backflow Assembly Tester certification based on reciprocity if the Department determines the issuing state or entity has

certification training and testing standards and qualifications substantially equivalent to the Department's certification training and testing standards and qualifications, and the applicant/Backflow Assembly Tester meets all requirements set forth in these rules, including:

(a) Submission of current certification from a state or entity having substantially equivalent certification training and testing standards, as determined by the Department;

(b) Submission of attendance and successful completion of an Oregon Department-approved Backflow Assembly Tester certification renewal class, including questions specific to OAR 333-061-0070 through 333-061-0073, within the 12 months prior to submitting the completed reciprocity application;

(A) A minimum score of 75% is required to pass the Department-approved Backflow Assembly Tester written examination;

(B) A minimum score of 90% is required to pass the Department-approved Backflow Assembly Tester physical-performance examination; and

(C) The Department will make available a list of approved certification training and testing sources.

(c) Registration with the Construction Contractor's Board or licensure with the Landscape Contractor's Board, as required by ORS 448.279(2);

(d) Submission of proof of high school graduation or equivalent;

(e) Submission of yearly test gauge calibration reports performed in the same month every year, as determined by the Backflow Assembly Tester;

(f) Submission of a completed reciprocity application form with all required documentation as specified on the reciprocity application form and in these rules; and

(g) Submission of a reciprocity application fee, as defined in OAR 333-061-0072(5).

(5) Application fees for Backflow Assembly Tester certification.

(a) Applicants for certification shall pay an application fee, made payable to the Department of Human Services, Health Services;

(b) The Department will not refund any fees once it has initiated processing an application;

(c) The application fees are:

(A) Initial Certification (2-years) $70;

(B) Certificate Renewal (2-years) $70;

(C) Reciprocity Review $35 + Initial Certification fee;

(D) Reinstatement $50 + Certificate Renewal fee; and

(E) Combination Certificate Renewal $110.

(d) Initial certification fees shall be prorated to the nearest year for the remainder of the 2-year certification period; and

(e) The Department shall apply the Combination Certificate Renewal fee when an applicant simultaneously applies for renewal of his or her Backflow Assembly Tester and Cross Connection Specialist certifications.

(6) Enforcement actions for applicant/Backflow Assembly Tester.

(a) The Department may deny an initial application for certification, an application for renewal of certification, an application for certification based on reciprocity, or revoke a certification if the Department determines:

(A) The applicant/Backflow Assembly Tester provided false information to the Department;

(B) The applicant/Backflow Assembly Tester certification issued by another state or entity was revoked;

(C) The applicant/Backflow Assembly Tester has permitted another person to use his or her certificate number;

(D) The applicant/Backflow Assembly Tester has failed to properly perform backflow prevention assembly testing;

(E) The applicant/Backflow Assembly Tester has falsified a backflow assembly test report;

(F) The applicant/Backflow Assembly Tester has failed to obtain and maintain a Construction Contractor's Board registration or a Landscape Contractor's Board license, as required by ORS 448.279(2);

(G) The applicant/Backflow Assembly Tester has failed to comply with these rules or other applicable Federal, State or local laws or regulations; or

(H) The applicant/Backflow Assembly Tester performs backflow assembly tests with a gauge that was not calibrated for accuracy within the 12-month period prior to testing the assembly.

(b) A person whose initial or renewal application has been denied, whose application for reciprocity has been denied, or whose certification has been revoked, has the right to appeal under the provisions of Chapter 183, Oregon Revised Statutes;

(c) Applicants or Backflow Assembly Testers who have been denied initial, renewal, or reciprocity certification or whose certifications have been revoked, may not reapply for certification for 1 year from the date of denial or revocation of certification; and

(d) Applicants or Backflow Assembly Testers may petition the Department prior to a year from the date of denial or revocation and may be allowed to reapply at an earlier date, at the discretion of the Department.

Statutory Authority: ORS 431 & ORS 448
Stats. Implemented: ORS 431.110, ORS 431.150, ORS 448.131, ORS 448.150, ORS 448.268, ORS 448.273 & ORS 448.279

333-061-0073 Cross Connection Specialist Certification

(1) The Department shall certify individuals who successfully complete all the requirements of these rules as Cross Connection Specialists. Only persons certified by the Department shall administer cross connection control programs for community water systems. Community water systems with 300 or more service connections are required to have a Cross Connection Specialist administer the water system's cross connection control program, unless specifically exempted from this requirement by the Department.

(2) Requirements for initial application for Cross Connection Specialist certification shall include:

(a) Satisfactory completion of a Department-approved Cross Connection Specialist training course within 12 months prior to the Department receiving the applicant's completed application;

(A) A minimum score of 85% is required to pass the Department-approved Cross Connection Specialist written examination; and

(B) The Department will make available a list of approved certification training and testing sources.

(b) Registration with the Construction Contractor's Board or licensure by the Landscape Contractor's Board, as required by ORS 448.279(2);

(c) Submission of proof of high school graduation or equivalent;

(d) Submission of documentation of 1-year of experience in water systems or plumbing;

(e) Submission of a completed initial application with all required documentation, as specified on the initial application form and in these rules; and

(f) Submission of an initial application fee, as defined in OAR 333-061-0073(5).

(3) Requirements for Cross Connection Specialist certification renewal shall include:

(a) All Cross Connection Specialist certificates will expire on June 30 of every odd numbered year, beginning June 30, 2005;

(b) Satisfactory completion of a total of at least 0.6 CEU in cross connection-related fields taken within the 2-year period immediately prior to the date of the certification renewal application. Training courses

must be taken at Department-approved training agencies or be Oregon Environmental Services Advisory Council-approved courses;

(A) A minimum score of 85% is required to pass the Department-approved Cross Connection Specialist written examination; and

(B) The Department will make available a list of approved certification training and testing sources.

(c) Registration with the Construction Contractor's Board or licensure by the Landscape Contractor's Board, as required by ORS 448.279(2);

(d) Submission of a completed renewal application with all required documentation, as specified on the renewal application form and in these rules;

(e) Submission of a renewal application fee as defined in OAR 333-061-0073(5);

(f) The Department may grant certification renewal without a reinstatement fee for up to 30 days after the expiration date of a certificate. A reinstatement fee of $50 will be added to the renewal fee for all renewal application fees received after the 30-day period; and

(g) A Cross Connection Specialist who does not renew within 12 months of the expiration date of his or her certificate will be required to meet all requirements of an initial applicant in section (2) of this rule.

(4) The Department may issue Cross Connection Specialist certification based on reciprocity if the Department determines the issuing state or entity has certification training and testing standards and qualifications substantially equivalent to the Department's certification training and testing standards and qualifications, and the applicant meets all requirements in these rules:

(a) Submission of current certification from a state or entity having substantially equivalent certification training and testing standards, as determined by the Department;

(b) Submission of attendance and successful completion of an Oregon Department-approved Cross Connection Specialist certification renewal class within the 12 months prior to submitting the completed application;

(A) A minimum score of 85% is required to pass the Department-approved Cross Connection Specialist written examination; and

(B) The Department will make available a list of approved certification training and testing sources.

(c) Registration with the Construction Contractor's Board or licensure with the Landscape Contractor's Board, as required by ORS 448.279(2);

(d) Submission of proof of high school graduation or equivalent;

(e) Submission of a completed reciprocity application form with all required documentation as specified on the reciprocity application form and in these rules; and

(f) Submission of a reciprocity application fee as defined in OAR 333-061-0073(5).

(5) Application fees for Cross Connection Specialist certification.

(a) Applicants shall pay an application fee, made payable to the Department of Human Services, Health Services;

(b) The Department will not refund any fees once it has initiated processing an application;

(c) The fees are:

(A) Initial Certification (2-years) $70;

(B) Certificate Renewal (2-years) $70;

(C) Reciprocity Review $35 + Initial Certification fee;

(D) Reinstatement $50 + Certificate Renewal fee; and

(E) Combination Certificate Renewal $110.

(d) Initial certification fees shall be prorated to the nearest year for the remainder of the 2-year certification period; and

(e) The Department shall apply the Combination Certification Renewal fee when an applicant simultaneously applies for renewal of his or her Backflow Assembly Tester and Cross Connection Specialist certifications.

(6) Enforcement actions for applicant/Cross Connection Specialist.

(a) The Department may deny an initial application for certification, an application for renewal of certification, an application for certification based on reciprocity, or revoke a certification if the Department determines:

(A) The applicant/Cross Connection Specialist provided false information to the Department;

(B) The applicant/Cross Connection Specialist certification issued by another state or entity was revoked;

(C) The applicant/Cross Connection Specialist has permitted another person to use his or her certificate number;

(D) The applicant/Cross Connection Specialist has falsified a survey/inspection/Annual Summary Report;

(E) The applicant/Cross Connection Specialist has failed to obtain and maintain a Construction Contractor's Board registration or a Landscape Contractor's Board license, as required by ORS 448.279(2); or

(F) The applicant/Cross Connection Specialist has failed to comply with these rules or other applicable Federal, State or local laws or regulations.

(b) A person whose initial or renewal application has been denied, whose application for reciprocity has been denied, or whose certification has

been revoked, has the right to appeal under the provisions of Chapter 183, Oregon Revised Statutes;

(c) Applicants or Cross Connection Specialists who have been denied initial, renewal, or reciprocity certification or who have had their certification revoked may not reapply for certification for 1 year from the date of denial or revocation of certification; and

(d) Applicants or Cross Connection Specialists may petition the Department prior to a year from the date of denial or revocation and may be allowed to reapply at an earlier date, at the discretion of the Department.

Statutory Authority: ORS 431 & ORS 448
Stats. Implemented: ORS 431.110, ORS 431.150, ORS 448.131, ORS 448.150, ORS 448.268, ORS 448.273 & ORS 448.279
Hist.: OHD 4-1999, f. 7-14-99, cert. ef. 7-15-99; PH 34-2004, f. & cert. ef. 11-2-04

333-061-0074 Cross Connection Training Programs, Course, and Instructor Requirements

(1) In order to qualify as a Department-approved Cross Connection Specialist or Backflow Assembly Tester-training program, the following requirements must be met:

(a) The training program must keep permanent records on attendance and performance of each student that enrolls in a course;

(b) The training program must submit the names of students who have successfully completed the training course to the Department upon completion of the training course;

(c) The training schedule must be set in advance and the schedule must be submitted to the Department quarterly for review and publication;

(d) The backflow training program must maintain a proper ratio of student-to-training equipment. A maximum ratio of three students for each backflow assembly test station is allowed for the Backflow Assembly Tester-training course;

(e) The training program must provide uniform training at all course locations;

(f) The training program shall provide the training materials necessary to complete the course. The training materials must be updated annually and submitted to the Department for approval; and

(g) The training program must have the following minimum training equipment available for each course:

(A) Each test station for Backflow Assembly Tester initial training and certification renewal courses shall include:

(i) An operating pressure vacuum breaker backsiphonage prevention assembly, spill- resistant pressure vacuum

breaker backsiphonage prevention assembly, double check valve backflow prevention assembly, and a reduced pressure principle backflow prevention assembly, with appropriate test gauges for each assembly; and

(ii) A backflow prevention assembly failure simulator shall also be provided that is capable of simulating leaking check valves, shutoff valves, and relief valve failures.

(B) The training aids for the Backflow Assembly Tester and Cross Connection Specialist-training courses shall include the atmospheric vacuum breaker, pressure vacuum breaker backsiphonage prevention assembly, spill-resistant pressure vacuum breaker backsiphonage prevention assembly, double check valve backflow prevention assembly, reduced pressure principle backflow prevention assembly, and a variety of test gauges.

(h) The training program must maintain uniform course curriculum according to sections (2), (3), (4) and (5) of this rule section, and maintain uniform instructor requirements according to section (6) of this rule section, subject to approval by the Department.

(2) Requirements for the Cross Connection Specialist-initial training course shall include:

(a) A minimum of 30 hours of training;

(b) The course content shall contain, but is not limited to, the following topics:

(A) Definitions, identification of cross connection hazards, and the hydraulics of backflow;

(B) Approved cross connection control methods, backflow prevention assembly specifications, and testing methods used for Department-approved backflow prevention assemblies;

(C) Cross connection control requirements for public water systems, implementation of a cross connection control program, and writing a local cross connection control ordinance;

(D) Public education and record-keeping requirements for an effective cross connection control program;

(E) Facility water use inspection techniques and hands-on inspection of local facilities to identify actual or potential cross connections;

(F) Cross connection control program enforcement and managing a Backflow Assembly Tester program; and

(G) Review and discussion of Cross Connection Specialist safety issues.

(c) A minimum score of 85% is required to pass the Department-approved Cross Connection Specialist written examination.

(3) Requirements for the Backflow Assembly Tester-initial training course shall include:

(a) A minimum of 40 hours of training;

(b) The course content shall contain, but is not limited to, the following topics:

(A) Definitions, identification of cross connections, and the hydraulics of backflow;

(B) Hazards associated with backflow pollution and contamination of potable water, approved cross connection control methods, and cross connection control program requirements for public water systems;

(C) Backflow prevention assembly approval requirements, specifications and installation requirements for approved backflow prevention assemblies, and backflow prevention assembly repair techniques;

(D) Complete disassembly and reassembly of each type of backflow prevention assembly;

(E) Hands-on demonstration of the correct test procedures, troubleshooting for each type of backflow prevention assembly, and diagnosis of two failure and/or abnormal conditions during the hands-on backflow assembly test of each type of backflow prevention assembly;

(F) Test gauge calibration and gauge accuracy verification methods; and

(G) Review and discussion of Backflow Assembly Tester safety issues.

(c) A minimum score of 75% is required to pass the Department-approved Backflow Assembly Tester written examination; and

(d) A minimum score of 90% is required to pass the Department-approved Backflow Assembly Tester physical-performance examination.

(4) Requirements for Cross Connection Specialist certification renewal shall include:

(a) A minimum of 0.6 CEU of training;

(b) The course content shall contain, but is not limited to, the following topics:

(A) Review of cross connection control regulations OAR 333-061-0070 through 0073;

(B) Review and discussion of recent backflow incidents and identification of cross connections; and

(C) Review and discussion of Cross Connection Specialist safety issues.

(5) Requirements for Backflow Assembly Tester certification renewal shall include:

(a) A minimum of 0.5 CEU of training, excluding examination time;

(b) The course content shall contain, but is not limited to, the following topics:

(A) Review of cross connection control regulations OAR 333-061-0070 through 0073;

(B) Review of approved test procedures for backflow prevention assemblies;

(C) Hands-on demonstration of the correct test procedures for each type of backflow prevention assembly;

(D) The correct student diagnosis and explanation of two failure and/or abnormal conditions during the hands-on backflow prevention assembly test of each type of backflow prevention assembly;

(E) Review and discussion of Backflow Assembly Tester safety issues; and

(F) Written examination that includes questions on cross connection control regulations OAR 333-061-0070 through 0073.

(c) A minimum score of 75% is required to pass the Department-approved Backflow Assembly Tester written examination; and

(d) A minimum score of 90% is required to pass the Department-approved Backflow Assembly Tester physical-performance examination.

(6) Instructor qualification requirements shall include:

(a) To be eligible as an instructor for Cross Connection Specialist-initial training or certification renewal course, the following experience in the cross connection control field is required:

(A) Must be currently certified as a Cross Connection Specialist in Oregon;

(B) Must have 2-years experience in enforcement of cross connection control requirements, or as a certified Cross Connection Specialist, or have related experience, subject to approval by the Department;

(C) Must participate in two complete Cross Connection Specialist training courses as a student instructor assigned to teach a portion of the curriculum. A student instructor training program schedule must be submitted to the Department for approval before training begins;

(D) Must receive a recommendation from the instructor of record for approval as an instructor. An unfavorable recommendation must be documented by supporting information and may be challenged by the trainee or by the Department; and

(E) Must attend at least one instructor update meeting provided by the Department each year.

(b) To be eligible as an instructor for the Backflow Assembly Tester initial training or certification renewal course, the following experience in the backflow prevention field is required:

(A) Must be currently certified as a Backflow Assembly Tester in Oregon;

(B) Must have 2-years experience as a certified Backflow Assembly Tester and experience installing, testing backflow prevention assemblies, or as a vocational instructor, or have related experience, subject to approval by the Department;

(C) Must participate in two complete Backflow Assembly Tester training courses as a student instructor assigned to teach a portion of the text curriculum and the physical- performance portion of the curriculum. A student instructor training program schedule must be submitted to the Department for approval before training begins;

(D) Must receive a recommendation from the instructor of record for approval as an instructor. An unfavorable recommendation must be documented by supporting information and may be challenged by the trainee or by the Department; and

(E) Must attend at least one instructor update meeting provided by the Department each year.

(c) The Department shall maintain a list of qualified instructors.

Stat. Auth.: ORS 431 & ORS 448

Stats. Implemented: ORS 431.110, ORS 431.150, ORS 448.131, ORS 448.150, ORS 448.268 & ORS 448.273

Hist.: OHD 4-1999, f. 7-14-99, cert. ef. 7-15-99; PH 34-2004, f. & cert. ef. 11-2-04

333-061-0090 Penalties

(1) Violation of these rules shall be punishable as set forth in ORS 448.990 which stipulates that violation of any section of these rules is a Class A misdemeanor.

(2) Pursuant to ORS 448.280, 448.285 and 448.290, any person who violates these rules shall be subject to a civil penalty. Each and every violation is a separate and distinct offense, and each day's violation is a separate and distinct violation.

(3) Under ORS 448.290, only the Administrator can impose penalties and the penalties shall not become effective until after the person is given an opportunity for a hearing.

(4) The civil penalty for the following violations shall not exceed $1,000 per day for each violation:
   (a) Failure to obtain approval of plans prior to the construction of water system facilities;
   (b) Failure to construct water system facilities in compliance with approved plans;
   (c) Failure to take immediate action to correct maximum contaminant level violations;
   (d) Failure to comply with sampling and analytical requirements;
   (e) Failure to comply with reporting and public notification requirements;
   (f) Failure to meet the conditions of a compliance schedule developed under a variance or permit;
   (g) Failure to comply with cross connection control requirements;
   (h) Failure to comply with the operation and maintenance requirements;
   (i) Failure to comply with an order issued by the Administrator.

(5) Civil penalties shall be based on the population served by public water systems and shall be in accordance with Table 34 below:

Table 34

Daily Population Served:	**Maximum Civil Penalty:**
10 to 100	$ 50/day
101 to 300	$ 100/day
301 to 1,500	$ 250/day
1,501 to 10,000	$ 500/day
over 10,000	$1,000/day

Statutory Authority: ORS 431 & ORS 448
Stats. Implemented: ORS 448.280, ORS 285 & ORS 290

OREGON ADMINISTRATIVE RULES
CHAPTER 166 DIVISION 200
CITY GENERAL RECORDS RETENTION SCHEDULE

166-200-0110 Public Works -- Operations and Maintenance Records

(1) **Backflow Prevention Device Test Records** Records documenting test results on backflow prevention devices designed to protect the city water system from pollution related to substances backing into water lines. Information usually includes date, type and size of device, serial number, location, test records, line pressure, name of tester, name and address of device owner, and related data. (Minimum retention: 10 years).

(4) **Cross Connection Control Survey Records** Records documenting the monitoring of potential or actual water system health hazards from pollution entering water pipes from other pipes. Records may include reports, surveys, checklists, and related documents. Information often includes address, contact person, business name, date, inspector, type of facility, description of protection, comments, corrections made, and other data. (Minimum retention: 1 year after disconnection or 10 years, whichever is longer).

Stat. Auth.: ORS 192 & ORS 357
Stats. Implemented: ORS 192.005 - ORS 192.170 & ORS 357.805 - ORS 357.895
Hist.: OSA 1-1998, f. & cert. ef. 1-7-98; OSA 3-2002, f. & cert. ef. 7-2-02